

**REMARKS**

Applicants' Attorney thanks the Examiner for the helpful interview of May 4, 2005 with Doreen M. Hogle, where the claim amendments below were discussed.

**Claim Amendments**

Claim 54 has been amended to clarify the array. In particular, Claim 54 has been amended to recite "array of n primers of N nucleotides in length, wherein each primer is immobilized to a solid support at a known location, and has known sequence, wherein a first primer of the array comprises 1 to N nucleotides, a second primer of the array comprises nucleotides 2 to N of the first primer plus nucleotide N+1, and the n<sup>th</sup> primer of the array comprises nucleotides 2 to the last nucleotide of primer n-1 plus nucleotides (N+(n-1)) such that each primer differs from the previous primer in the array by one base at the growing end, and wherein primers of the array are capable of hybridizing successively along the polynucleotide of interest, generating a plurality of annealed primers." Claim 54 has also been amended to clarify that the identity of each terminating nucleotide added in step b) is observed. Support for Claim 54 as amended is found in Claim 63; Figs. 1-4, which show arrays of primers; and in the specification on page 4, line 29 through page 5, line 7; page 6, line 19 through page 7, line 25; page 8, lines 17-23; and page 12, lines 1-18.

Claim 61 and 62 have been amended streamline the wording.

Claim 63 has been canceled.

**Rejection of Claim Under 35 U.S.C. § 102(b) and (e)**

Claims 54-63 stand rejected under 35 U.S.C. § 102(b) and (e) as being anticipated by Söderlund (U.S. Patent 6,013,431) and Söderlund (WO 91/13075). The Examiner stated that Söderlund teaches "a) annealing a single sample of the polynucleotide of interest to a plurality of primers (see column 9, lines 14-32, where a single sample is split into two tubes and annealed to two different primers (two being a plurality))."<sup>1</sup>

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<sup>1</sup>Office Action dated March 8, 2005, page 3, third paragraph.

Claim 54 has been amended to recite “wherein each primer is immobilized to a solid support at a known location.” Claim 54 has also been amended to clarify the array of primers. In particular, Claim 54 has been amended to recite that a first primer of the array comprises 1 to N nucleotides, a second primer of the array comprises nucleotides 2 to N of the first primer plus nucleotide N+1, and the  $n^{\text{th}}$  primer of the array comprises nucleotide 2 to the last nucleotide of primer n-1 plus nucleotides (N+(n-1)) such that each primer differs from the previous primer in the array by one base at the growing end.”

Söderlund teaches that the target is immobilized.<sup>2</sup> Söderlund teaches the use of primers of 9 and 10 nucleotides in length, wherein the primers are hybridized either to two separate samples of immobilized template or are hybridized sequentially to an immobilized template, wherein the first primer is eluted before hybridization of the second primer.<sup>3</sup>

Söderlund does not anticipate the invention of Claim 54 because Söderlund fails to teach every element of Claim 54. Claim 54, as amended, states each primer is immobilized to a solid support at a known location. Söderlund does not teach or suggest the use of primers that are immobilized to a solid support at known locations.<sup>4</sup> Furthermore, Söderlund does not disclose or suggest the use of an array of n primers, wherein a first primer of the array comprises 1 to N nucleotides, a second primer of the array comprises nucleotides 2 to N of the first primer plus nucleotide N+1, and the  $n^{\text{th}}$  primer of the array comprises nucleotide 2 to the last nucleotide of primer n-1 plus nucleotides (N+(n-1)) such that each primer differs from the previous primer in the array by one base at the growing end. Claims 55-62 and 64 are dependent upon Claim 54, and include all of the elements of Claim 54. Therefore, Claims 54-62 and 64 are novel over Söderlund. Withdrawal and reconsideration of the rejection are respectfully requested.

#### Rejection of Claims Under 35 U.S.C. § 103(a) Over Söderlund in View of Mackay

Claims 54-64 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Söderlund in view of Mackay (U.S. Patent 4,874,492).

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<sup>2</sup>Söderlund, Col. 6, lines 1-52, Fig. 3, Col 9, lines 27-28.

<sup>3</sup>Söderlund, Fig. 3, Col. 9, lines 27-28.

<sup>4</sup>Söderlund, see Col. 7, line 7-65.

Claim 54 is nonobvious over the cited art because the combination of Söderlund and Mackay fails to teach or suggest all of the claim limitations. In particular, the combined teachings of Söderlund and Mackay fails to teach or suggest the use of primers of N nucleotides in length, wherein each primer is immobilized to a solid support at a known location. In addition, the combined teachings of Söderlund and Mackay fail to teach or suggest the use of an array of n primers, wherein a first primer of the array comprises 1 to N nucleotides, a second primer of the array comprises nucleotides 2 to N of the first primer plus nucleotide N+1, and the n<sup>th</sup> primer of the array comprises nucleotide 2 to the last nucleotide of primer n-1 plus nucleotides (N+(n-1)) such that each primer differs from the previous primer in the array by one base at the growing end. Therefore, Claims 54-62 and 64 are nonobvious over Söderlund in view of Mackay. Withdrawal and reconsideration of the rejection are respectfully requested.

Rejection of Claims Under 35 U.S.C. § 103(a) Over Söderlund in View of Goelet, *et al.*

Claims 54-64 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Söderlund in view of Goelet, *et al.* (U.S. Patent 6,004,744).

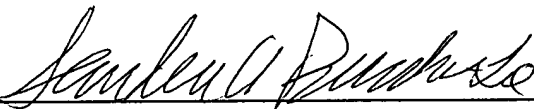
Claim 54 is nonobvious over the cited art because the combination of Söderlund and Goelet, *et al.* fails to teach or suggest all of the claim limitations. In particular, the combined teachings of Söderlund and Goelet, *et al.* fails to teach or suggest the use of an array of n primers, wherein a first primer of the array comprises 1 to N nucleotides, a second primer of the array comprises nucleotides 2 to N of the first primer plus nucleotide N+1, and the n<sup>th</sup> primer of the array comprises nucleotide 2 to the last nucleotide of primer n-1 plus nucleotides (N+(n-1)) such that each primer differs from the previous primer in the array by one base at the growing end. Therefore, Claims 54-62 and 64 are nonobvious over Söderlund in view of Goelet, *et al.* Withdrawal and reconsideration of the rejection are respectfully requested.

**CONCLUSION**

In view of the above amendments and remarks, it is believed that all claims are in condition for allowance, and it is respectfully requested that the application be passed to issue. If the Examiner feels that a telephone conference would expedite prosecution of this case, the Examiner is invited to call the undersigned.

Respectfully submitted,

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